Acestrorhynchus heterolepis (a fish, no common name)
Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, March 2014
Revised, January 2018, June 2018
Web Version, 6/11/2018

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1 Native Range, and Status in the United States

Native Range

From Eschmeyer et al. (2017):

"Distribution: Amazon and Orinoco River basins: Brazil, Colombia, Bolivia and Venezuela."

From López-Fernández and Winemiller (2003):

"[In Venezuela] Records of *A. heterolepis* are restricted to clear and black-water rivers in the upper and middle sections of the Orinoco, such as the Río Mavaca, Río Padamo, and Río

Ventuari. The species is most abundant in the Rio Negro Basin of Venezuela, where it is found in the Río Casiquiare and its tributaries. To the east, the distribution is limited to a single record from the Río Caura. The northernmost record corresponds to the clear waters of the Río Aguaro, and the western limit is the Río Cinaruco."

Fowler (1939) reports *A. heterolepis* as present in the Peruvian Amazon.

Galacatos et al. (1996) report *A. heterolepis* from the Amazon River basin in western Ecuador.

Status in the United States

This species has not been reported in the United States. There is no indication that this species is in trade in the United States.

Means of Introductions in the United States

This species has not been reported in the United States.

Remarks

From Dourado et al. (2015):

"[…] *Acestrorhynchus heterolepis* (Cope, 1878) known as […] "urubarana mucura" […]."

"The main differences between *A. falcatus* and *A. heterolepis*, as indicated by the analysis, were associated with swimming agility and prey size. *A. heterolepis* has a shallow body, close to a fusiforme profile, deep caudal fin and low caudal peduncle. In contrast, *A. falcants* possesses a shorter head and a lower caudal fin, better adapted to capture small preys and to live in mid-lower region of the water column."

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysi
Order Characiformes
Family Acestrorhynchidae

Genus Acestrorhynchus
Species *Acestrorhynchus heterolepis*"

"Taxonomic Status: valid"

Size, Weight, and Age Range

From Froese and Pauly (2017):

"[…] Max length : 32.1 cm SL male/unsexed; [Menezes 1969]."

Environment

From Froese and Pauly (2017):

"Freshwater; benthopelagic."

Climate/Range

From Froese and Pauly (2017):

"Tropical"

Distribution Outside the United States

Native

From Eschmeyer et al. (2017):

"Distribution: Amazon and Orinoco River basins: Brazil, Colombia, Bolivia and Venezuela."

From López-Fernández and Winemiller (2003):

"[In Venezuela] Records of *A. heterolepis* are restricted to clear and black-water rivers in the upper and middle sections of the Orinoco, such as the Río Mavaca, Río Padamo, and Río Ventuari. The species is most abundant in the Rio Negro Basin of Venezuela, where it is found in the Río Casiquiare and its tributaries. To the east, the distribution is limited to a single record from the Río Caura. The northernmost record corresponds to the clear waters of the Río Aguaro, and the western limit is the Río Cinaruco."

Fowler (1939) reports *A. heterolepis* as present in the Peruvian Amazon.

Galacatos et al. (1996) report *A. heterolepis* from the Amazon River basin in western Ecuador.

Introduced

This species has not been reported as introduced outside of its native range.

Means of Introduction Outside the United States

This species has not been reported as introduced outside of its native range.

Short Description
From Froese and Pauly (2017):

"Bifurcated canals of the lateral line scales; 52 scale rows between the lateral line and base of the dorsal fin; and 31-35 scale rows between the lateral line and the base of the anal fin [López-Fernández and Winemiller 2003]."

From Dourado et al. (2015):

"This species is easily identified by the presence of the laterosensory canal of each lateral line scale with an upper and lower small branch (versus, only one branch in other *Acestrorhynchus* species)."

Biology
From Froese and Pauly (2017):

"Inhabits clear and black-water rivers [López-Fernández and Winemiller 2003]. Feeds on fishes [Géry 1977]."

Human Uses
No information reported for this species.

Diseases
No information available. No OIE reportable diseases have been documented for this species.

Threat to Humans
From Froese and Pauly (2017):

"Harmless"

3 Impacts of Introductions
There are no reported introductions for this species. Data on the impacts of introductions are lacking.

4 Global Distribution

Figure 1. Map of known global distribution of *Acestrorhynchus heterolepis*, reported from South America. Map from GBIF Secretariat (2017). The points in Guyana were not used in the climate matching analysis because the existence of established populations in these locations could not be confirmed.

5 Distribution Within the United States

This species has not been reported as introduced or established in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean distance) was medium in peninsular Florida. Low matches occurred throughout the rest of the United States. Climate 6 score indicated that the contiguous United States has a low climate match overall. The range for a low climate match is from 0.000 to 0.005, inclusive; Climate 6 score of *Acestrorhynchus heterolepis* is 0.005.

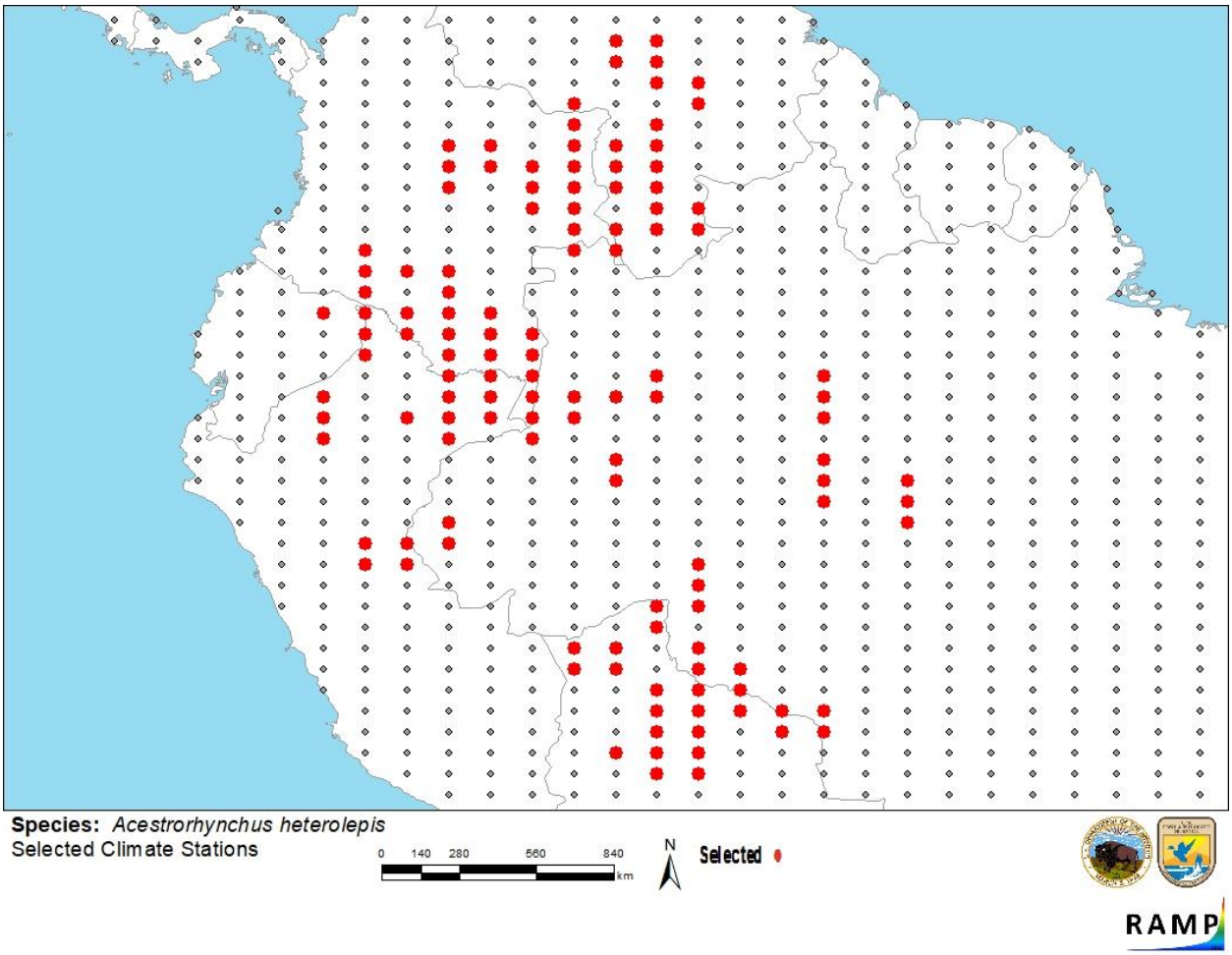

Figure 2. RAMP (Sanders et al. 2018; 16 climate variables; Euclidean distance) source map showing weather stations in South America selected as source locations (red; Venezuela, Colombia, Ecuador, Peru, Bolivia, Brazil) and non-source locations (gray) for *Acestrorhynchus heterolepis* climate matching. Source locations from GBIF Secretariat (2017).

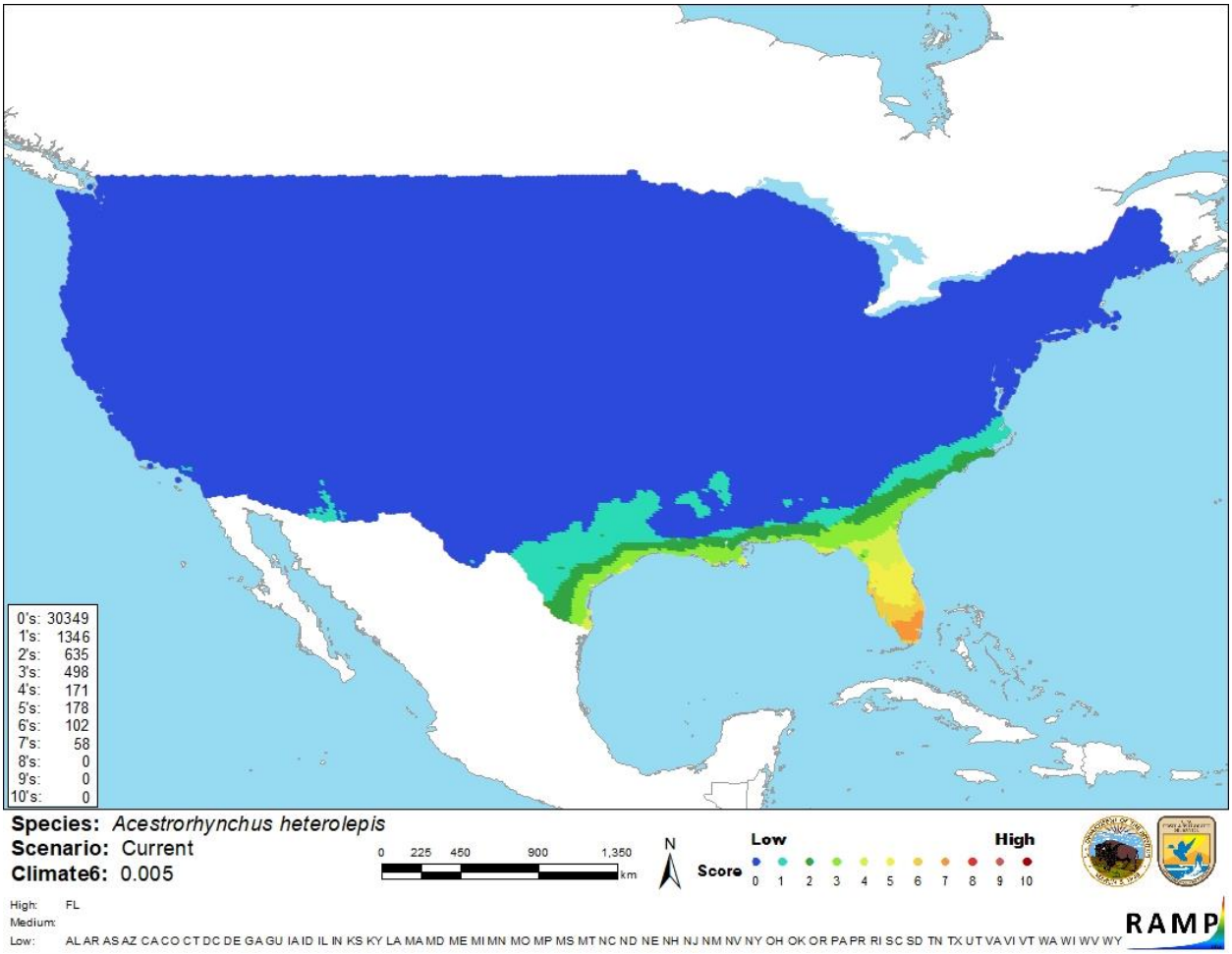

Figure 3. Map of RAMP (Sanders et al. 2018; 16 climate variables; Euclidean distance) climate matches for *Acestrorhynchus heterolepis* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10=Highest match.

The "High", "Medium", and "Low" climate match categories are based on the following table:

Climate 6: Proportion of (Sum of Climate Scores 6-10) / (Sum of total Climate Scores)	Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Information on the biology and distribution of *A. heterolepis* is not widely available and scientific information on the impacts of introductions is lacking because no introductions of this species have been reported. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Acestrorhynchus heterolepis is a freshwater fish species native to South America. No introductions of this species have been reported. Data on impacts of introductions are lacking; absence of this information makes the certainty of this assessment low. The climate match with the contiguous United States is low. Overall risk posed by this species is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

9 References

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

Dourado, E. C. dos S., J. L. S. Nunes, and N. M. Piorski. 2015. Ecomorphology and diet of two species of *Acestrorhynchus* from Brazilian Northeast. Cybium 39(1):11-19.

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Fowler, H. W. 1939. A collection of fishes obtained by Mr. William C. Morrow in the Ucayali River Basin, Peru. Proceedings of the Academy of Natural Sciences of Philadelphia 91:219-289.

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Galacatos, K., D. J. Stewart, and M. Ibarra. 1996. Fish community patterns of lagoons and associated tributaries in the Ecuadorian Amazon. Copeia 1996(4):875-894.

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Acestrorhynchus heterolepis* (Cope 1878). Global Biodiversity Information Facility, Copenhagen. Available: http://www.gbif.org/species/2355583 (January 2018).

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Sanders, S., C. Castiglione, and M. H. Hoff. 2018. Risk Assessment Mapping Program: RAMP, version 3.1. U.S. Fish and Wildlife Service.

10 References Quoted But Not Accessed

Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.

Géry, J. 1977. Characoids of the world. Neptune City, Reigate.

Menezes, N. A. 1969. Systematics and evolution of the tribe Acestrorhynchini (Pisces, Characidae). Arquivos de Zoologia 18(1-2):1-150.